Name: _____   Date: _____
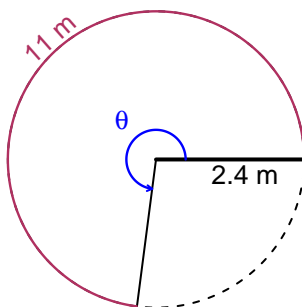
Trig Final (Practice v47)

- You should have a calculator (like Desmos) and a unit-circle reference sheet.

Question 1

In the figure below, we see a circle and a central angle that subtends an arc. The radius is 2.4 meters. The arc length is 11 meters. What is the angle measure in radians?
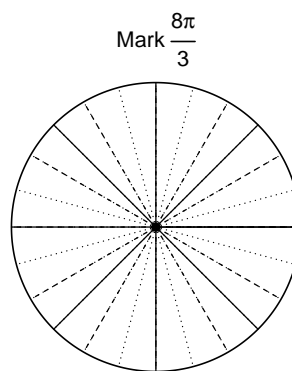

Question 2

Consider angles $\frac{-11\pi}{4}$ and $\frac{8\pi}{3}$. For each angle, use a spiral with an arrow head to **mark** the angle on a circle below in standard position. Then, find **exact** expressions for $\sin\left(\frac{-11\pi}{4}\right)$ and $\cos\left(\frac{8\pi}{3}\right)$ by using a unit circle (provided separately).
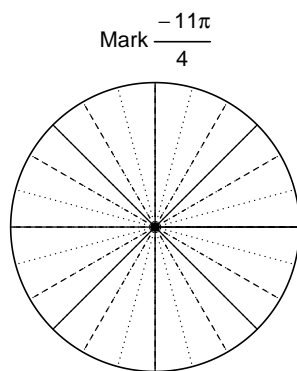
Find $\sin(-11\pi/4)$

Find $\cos(8\pi/3)$

Question 3

If $\sin(\theta) = \frac{-72}{97}$, and θ is in quadrant III, determine an exact value for $\tan(\theta)$.

Question 4

A mass-spring system oscillates vertically with an amplitude of 4.47 meters, a frequency of 7.12 Hz, and a midline at $y = 2.13$ meters. At $t = 0$, the mass is at the midline and moving down. Write an equation to model the height (y in meters) as a function of time (t in seconds).